

NOAA REPORT



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October 1994

MCI to Provide International Satellite-based Weather Network: MCI has been selected to provide a new international satellite-based aviation weather network that will enable faster, more reliable dissemination of critical meteorological aviation data and forecast information to some 75 countries in the Atlantic and Pacific Ocean regions.

The network, expected to be operational by early next year, is being provided by MCI under a seven-year, multimillion dollar contract awarded by NWS and three other agencies.

MCI will design and build the new customized global network, the International Satellite Communications System, to serve the

NEWS BRIEFS

World Area Forecast System Satellite Broadcast System and the Caribbean Satellite Network. The new system is based on data transmission technology using small satellite earth station dishes, called Very Small Aperture Terminals, to provide more reliable, secure higher-speed data transmissions cost-efficiently.

Reward Seen Stemming Turtle Strandings Off Texas: An increase in sea turtle strandings along the north Texas coast has prompted NMFS to boost its enforcement efforts in the Gulf of Mexico shrimp fishery and to offer a reward of up to \$10,000 for information leading to the arrest of anyone violating federal regulations that protect sea turtles.

Both the U.S. Coast Guard and the Texas Parks and Wildlife Department are contributing to the activity, which Andrew Kemmerer, director of the fisheries service's Southeast regional office in St. Petersburg, Fla., calls "the most concentrated enforcement

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Powerful Emergency Aircraft Locator for Satellite Search & Rescue Missions Debuts

A new and more powerful emergency locator transmitter that would enable rescuers to more accurately locate downed aircraft has been registered with NOAA for use on private planes.

Emergency locator transmitters are designed to automatically activate and transmit via satellite a distress signal when an aircraft crashes and provide a homing signal rescuers to locate the crash site.

The emergency locator transmitter that will use the 406 MHz frequency will be able to locate downed aircraft with greater accuracy of within one to three miles.

The emergency locator
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Too-Long Screw Blamed for '93 Polar Satellite Failure

The probable cause of the failure of the NOAA-13 meteorological satellite in August 1993 was a short circuit that prevented the solar array current from powering the spacecraft and recharging the batteries, according to a 12-member investigating board.

In a 36-page report, the board indicated that the failure most likely occurred in a battery charge assembly on the spacecraft. Based on telemetry from the satellite, the board indicated the most probable cause was a 1¼-inch screw that extended too far below an aluminum plate designed to dissipate heat. The screw end penetrated the insulation and made contact with a radiator plate, causing the short circuit.

The short circuit effectively prevented the solar arrays from powering the spacecraft, forcing the spacecraft to rely on its batteries, according to the board's

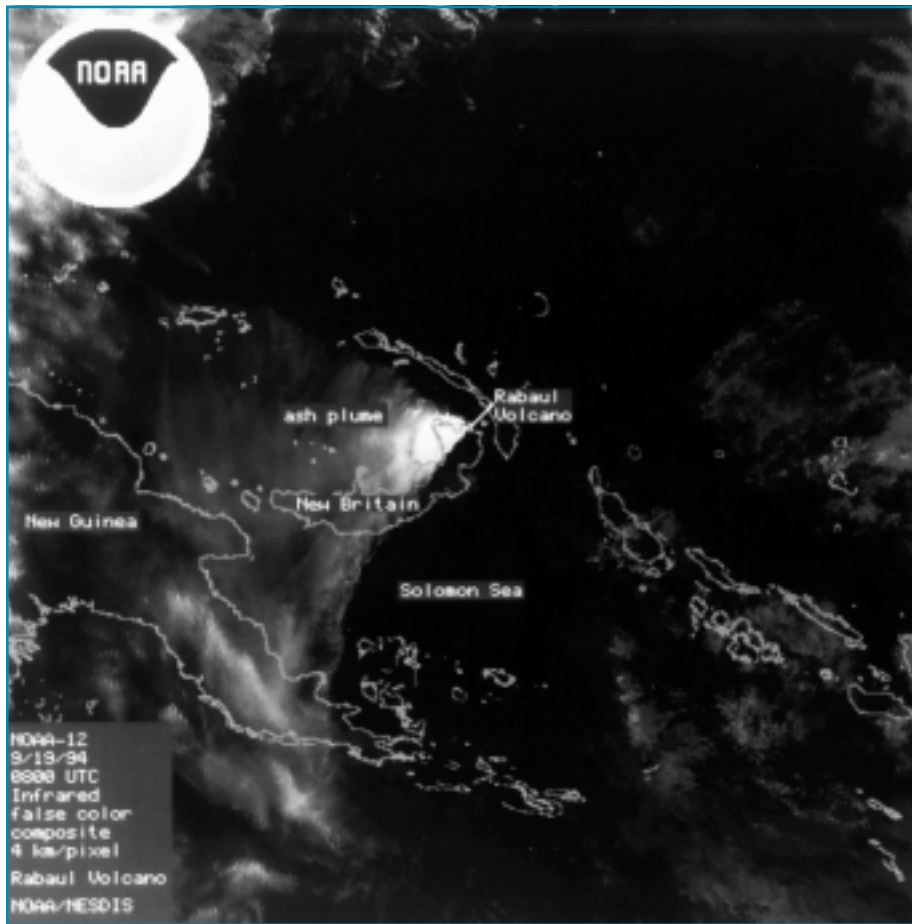
findings. Without power from the solar arrays, the batteries could not recharge and exhausted their power, leaving the satellite with no power to operate its instruments or to communicate with the ground.

Design Was 'Prone to Failure': NASA

"The board concluded that the design of the charge assembly is prone to a failure of this type," said Jeremiah Madden of NASA's Goddard Space Flight Center, Greenbelt, Md., who chaired the board. "The design requires

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Pacific Volcano Caught By Polar Satellite



NOAA-12's view of the eruption of the Rabaul Caldera volcano in Papua New Guinea last month.

Mid-Columbia Summer Chinook Won't Be Listed Under Endangered Species Act

NOAA will not list mid-Columbia River summer chinook salmon as threatened or endangered under the Endangered Species Act.

However, mid-Columbia chinook should benefit from actions taken to protect listed Snake River salmon in the same area, through increased water flows and ocean harvest restrictions.

NOAA's National Marine Fisheries Service has concluded that the fish is part of a larger group that includes all late-run (summer and fall) Columbia River chinook from the main stem Columbia River, which is not currently listed under the Endangered Species Act.

The fisheries service was asked last year by environmental groups to list the mid-Columbia River summer chinook

salmon and to designate critical habitat for the fish under the Endangered Species Act.

'Far From Robust': Stelle

Will Stelle, director of the fisheries service's Northwest regional office in Seattle, cautioned, however, that the late-run chinook stocks are far from robust.

"Even though the mid-Columbia late-run is not at significant risk of extinction or endangerment, the run sizes are not as strong as they were in the mid 1970's," Stelle said. "This may indicate problems with habitat, dam passage, harvest rates or hatchery practices."

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The Rabaul Caldera volcano on New Britain Island, Papua New Guinea began a large explosive eruption between 7:00 and 8:00 A.M. New Britain time on September 19, 1994. The volcano was reported to be erupting from five separate vents.

30,000 Evacuated

Reports indicated that over 30,000 people had been evacuated from the city of Rabaul. satellite observations indicated that the ash plume was blowing west at about 60 knots, at an altitude of at least 70,000 ft., indicating that this is a major eruptive event.

This image was processed from 4 kilometer resolution data taken by NOAA-12 at 6:00 pm New Britain time (0800 UTC), and is a false color composite of two thermal infrared channels, 3 and 4.

During the eruption, the Synoptic Analyses Branch (SAB) to date issued two formal Volcano Hazard Alerts on the presence of airborne volcanic ash to aviation interests. Were an eruption such as this to take place in a location where ash could cause danger to planes within U.S. airspace, the NOAA/Federal Aviation Administration (FAA) Volcano Hazards Alert Plan would be activated, and periodic warnings to airmen would be issued from NESDIS through the FAA.

The NOAA Polar-Orbiting Satellites

The NOAA polar-orbiting satellites collect global data on cloud cover, surface conditions such as ice, snow, and vegetation, surface and atmospheric temperatures; measure solar particle flux; and collect and relay information from fixed and moving data platforms. There are normally two of these satellites in orbit, providing coverage at least four times daily over any part of the Earth.

The primary imaging system is the Advanced Very High Resolution Radiometer (AVHRR) which consists of a visible, near infrared, and three thermal infrared channels. There are also three sounding instruments used to measure atmospheric temperature and humidity.

An onboard Space Environment Monitor is used to measure solar particle flux at the spacecraft. ☺

NOAA's Central Library

Global Perspective with Customized Service

With a perspective that ranges from outer space to the ocean floor, a team of experts stands with their feet firmly on the ground—ready to respond to requests from around the world.

The staff at NOAA's Central Library maintain a collection of more than one million books, journals, technical reports, and other sources that support research in disciplines such as the atmospheric sciences, fisheries, space sciences, marine biology, meteorology,

oceanography and related disciplines of interest to NOAA.

The library, in Silver Spring, Md., is a tremendous resource for NOAA staff, and is also open to the public. While NOAA staffers have priority, the library welcomes researchers from all walks of

life to use the facility. If people outside of NOAA wish to borrow materials, they may request them through their own library through interlibrary loan.

"The library is here to serve," said Carol B. Watts, who heads the Library and Information Services Division. "Anyone who needs assistance in locating research materials, getting an answer to a question, or learning just where to call should check with us first."

From Astronomy to Zoology

The reference staff maintains a directory of resources on subjects ranging from astronomy to zoology at the reference desk. When staff members receive a request for information beyond the scope of the library's materials, they determine where the requestor can get the information. They log this information into the directory, thus keeping an accurate referral source for all kinds of subjects.

Library staff members will find answers to brief reference questions or more complex research questions. "Quick reference" questions include determining if an item is present in the library, book verification, local climatological data retrieval, and referrals.

For in-depth information retrieval, the library provides a computerized literature service, including CD-ROM and on-line retrieval from more than 500 databases of environmental and other information. Information on the centralized, automated NOAA Library and Information Catalog (NOAALINC) can also be accessed from a personal computer via modem. NOAALINC includes information on the availability of materials in NOAA libraries throughout the country.

The library collection incorporates the holdings of NOAA's predecessor agencies: Coast and Geodetic Survey, U.S. Weather Bureau, U.S. Fisheries Commission, and Environmental Data Service. Most of the collection dates from 1820.

[GPO Depository](#)

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Texas Fisheries Lab Offers Insights on Sustainable Development, Diversity

As part of my goal to visit all major NOAA facilities, I recently had the opportunity to see the Galveston Laboratory of the National Marine Fisheries Service's Southeast Fisheries Center. The work and research being conducted at the lab is important to NOAA's overall commitment to sustainable development and is also an integral part of NOAA's strategic plan for Building Sustainable Fisheries and Recovering Protected Species.

I especially wanted to talk with NMFS scientists about shrimp and other Gulf Coast fishery issues and to see the famous Turtle Excluder Devices (TEDs) and the endangered sea turtles they protect. The lab is also developing fish excluder devices to reduce bycatch, creating and restoring wetlands, and studying estuarine ecology.

The historic Galveston Lab is a beautiful example of Spanish architecture, complete with high ceilings, spacious rooms, and a sense of scale not often found in more modern buildings. It was established in 1929 as a Bureau of Commercial Fisheries Laboratory to study oysters. As I discovered during a very comprehensive briefing by lab staff, the scope of their work has increased significantly in the last 50 years!

I was interested in the lab's work with TEDs, since these devices are good examples of technology that is being

used to achieve sustainability. Through the proper use of these devices shrimpers can continue to fish, thereby adding to the economy, and the endangered turtles can escape from shrimpers nets. I appreciated the chance to see first hand these devices, and the turtles they protect.

D. JAMES BAKER



Productive Gulf Fishery

The shrimp fishery in the Gulf is one of the most productive fisheries in the United States. The Galveston Lab is responsible for collecting statistics on the fishery and issuing shrimp yield forecasts. Researchers at the lab are also studying the effects of salinity and temperature on the growth cycle of the brown, white and pink shrimp for which the Gulf is famous. Bycatch of other species in the shrimp fishery is also a major issue, especially since capture of unintended species can amount to up to seven times the weight of the shrimp. To address this problem, the lab is developing fish excluder devices that accomplish the same goal

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FOCUS On

NOAA-13 Report

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meticulous construction procedures, and there are many areas where a short could occur."

The board termed the design of the battery charge assembly "unforgiving," indicating that "it cannot be checked once it is assembled since the heat sink cannot be removed or easily X-rayed."

Launched into a 540-mile (870-kilometer) near polar orbit on an Atlas rocket from Vandenberg Air Force Base, Calif., on August 9, 1993, the \$77 million spacecraft operated normally until August 21. During orbit 175, 12 minutes after the satellite's last communication with the NOAA Command and Data Acquisition site at Wallops, Va., the short circuit occurred, the board found.

LOW VOLTAGE NOTED

When controllers communicated with the satellite and found it operating normally on orbit 175, they followed standard procedures and turned their attention to other operational satellites. Controllers did not communicate with NOAA-13 again until orbit 177. At that point the operations crew noted battery low voltage and high temperature flags on all three batteries, which were the first indications of a problem, the board reported.

Controllers were unable to acquire a signal from the spacecraft on orbit 178, the board noted, and orbits 179 and 180 were not monitored because the spacecraft did not pass over either the ground station at Wallops or the other ground station monitoring the satellite at Fairbanks, Alaska.

On orbit 181, satellite recovery procedures were started; however, no further signals from the satellite were received.

In reaching its conclusion as to

probable cause, the board looked at hardware being used to build NOAA-J, the next spacecraft in the NOAA series, targeted for launch in December. The team compared 12 relay mounting screws from the stock used for NOAA-J, with dimensions of the NOAA-J relay mounting.

The team found that 10 of the 12 screws were long enough to penetrate into the insulation layer on NOAA-J, lending "credence to the possibility that the failure on NOAA-13 was due to such a screw," the board reported.

POOR DESIGN A CONTRIBUTOR

The team reported that a "major contributor" to the failure was the "poor packaging design" of the battery charge assembly heat sink plate "that allows

numerous places for shorts, requires unique insulation schemes and demands tightly controlled careful assembly."

Another major contributor reported by the board was "poor processing and inspection" of the charge assembly. There was no procedure, the board indicated, that underlined the importance of "making sure nothing protrudes beyond the bottom of the heat sink. The inspection seemed to be the responsibility of the technician that puts the unit together rather than that of an inspection by a quality assurance engineer," the board concluded.

Although there was a specific manufacturing instruction to check the box for protrusion, "the quality control plan for building the BCX box (battery charge assembly box) was inadequate,"



An artist's rendering of a NOAA polar orbiting satellite, similar to NOAA-13.

according to the team. "There were not enough checks performed on the unit as it was being built. The procedures were not adequate to inform the technician of the criticality of the unit and to give him specific instructions on how to check his work."

REPEATED SUCCESSFUL FLIGHTS

The team attributed the lack of inspection partially to the repeated successful flights of this BCX design. "The use of previously flown hardware

The failure team also recommended that NOAA upgrade its ground stations so that health and safety telemetry may be taken from operational satellites during every orbit. NOAA officials have committed to adopting all of the board's recommendations as soon as practicable, said Gary Davis, Deputy Director of Satellite Operations for NOAA.

To correct the NOAA-13 deficiencies on the NOAA-J spacecraft, modifications in the area where the failure most probably occurred have been made, according to Charles Thienel, Associate Director of Flight Projects for Meteorological

developed flight software that will allow ground controllers more time to deal with a power-system problem by isolating a short circuit, effectively removing the affected subsystem from the spacecraft's power system.

Also, Thienel explained, an exhaustive review was undertaken on NOAA-J by an independent team to look carefully at every spacecraft system and subsystem. The review will verify that all inspections and tests were carried out to demonstrate compliance with the mission requirements.

The NOAA prime contractor and builder, Martin Marietta Astro Space, East Windsor, N.J., in addition to making the specific changes recommended by the NOAA-13 board, has undertaken intensive reviews of the design, manufacture and testing of every satellite it is building. For NASA, these satellites include the Landsat 7 and EOS-AM1 Earth-observing spacecraft and the Wind and Polar space science missions.

Among recommendations made were high-voltage tests to verify the insulation, and the incorporation of software that would reduce power consumption if on-board computers were to detect low battery charges. All of the board's recommendations regarding the NOAA spacecraft are being implemented.

tends to lessen the overview it receives," the board suggested. "This unit's heritage goes back to at least 1972. The first assembly technicians were probably extremely careful and understood the criticality of the design; however, in time and with personnel changing, there was probably some loss of knowledge and awareness."

The board made 21 recommendations for future NOAA spacecraft, included as appendices to the report. The recommendations included a thorough review of and modification to elements of the spacecraft's power system, closer monitoring of work in process by experienced personnel, modification of the heat sink in the battery charge assembly and improvements in some of the spacecraft's software.

TESTS RECOMMENDED

Among the specific points the board made were recommendations for high-voltage tests to verify the insulation and the incorporation of software that would reduce power consumption if on-board computers were to detect low battery charges. All of the board's recommendations regarding the NOAA spacecraft are being implemented by the project office.

Satellites at NASA's Goddard Space Flight Center.

The modifications addressed all of the potential failure causes mentioned in the report. Most importantly, the radiator plate in the charge assembly is no longer "hot," or carrying electric current. Even if a screw were to touch the plate, as may have happened on NOAA-13, there would be no short circuit.

ADDITIONAL INSPECTIONS

Moreover, he said, additional inspections and tests were implemented on NOAA-J. The project team also has

NOAA TEAM MEMBERS

In addition to NASA staff, NOAA failure team members were Thomas E. McGunigal, Systems Acquisition Office and Gary Davis, NESDIS. F. John Solman III and Angelo Colao, of the Massachusetts Institute of Technology (MIT), Cambridge, Mass., served as consultants to the board, and Josef Wonsever, NASA Headquarters, David Coolidge, Flight Projects Directorate (GSFC), and Wilfred Mazur, NOAA, served as advisors to the panel.

NOAA's polar-orbiting satellite program is a cooperative effort with NASA. The space agency's Goddard Space Flight Center develops and

Researcher Honored by WMO

Dian J. Gaffen, a scientist with the NOAA Air Resources Laboratory in Silver Spring, Md., has received the World Meteorological Organization's prestigious Professor Dr. Vilho Väisälä Award for her scientific paper on "Historical Changes in Radiosonde Instruments and Practices."

The award includes a medal, a certificate and a \$5,000 check. It is

awarded for the best scientific paper published during the previous year on meteorological instruments and methods of observation.

Gaffen, a research meteorologist, received a B.A. from the University of California at Berkeley in 1981, an M.S. in meteorology from San Jose State University in 1984, and a Ph.D. from the University of Maryland in 1992. ☺

Earth & Sky Radio Puts Science on the Air

NOAA science is reaching across airwaves nationwide, through the thought-provoking programs and NOAA sponsorship of *Earth & Sky* radio.

This dynamic series explores scientific knowledge of the natural world, presenting it in clearly-crafted, two-minute capsules. Since *Earth & Sky's* inception in 1991, NOAA has been tapped as a resource for a number of topics relating to the earth's oceans and atmosphere. On August 1, however, the relationship became official, bringing NOAA's name into millions of households as a national *Earth & Sky* sponsor.

The opportunity to work with *Earth & Sky* has given NOAA a high-profile means of getting the word out about current environmental issues, as well as increasing public awareness of NOAA as an significant environmental agency. Some of the NOAA topics getting air time thus far have been the weather service's new U.V. Index, national marine sanctuaries, National Coast Weeks, the ozone hole over the Antarctic, wetlands, sea floor pockmarks, and marine biodiversity. Upcoming in November are programs on preserving marine life diversity (Nov. 7), five threats

to marine life diversity (Nov. 8-11), VORTEX (tornado) project (Nov. 18), zebra mussels (Nov. 25), and coral reefs (Nov. 28).

'Gold Mine' of Information



Earth & Sky

R A D I O S E R I E S

According to Deborah Byrd, *Earth & Sky's* creator, writer, co-producer, and co-host, the program's staff was delighted to discover this gold mine of information and NOAA's willingness to share it.

"Before we started working with NOAA, we at *Earth & Sky* had no idea

that NOAA was involved in so many fascinating projects," Byrd said. "We have thoroughly enjoyed bringing this information to our audience and look forward to more great NOAA information to come on future shows! We hope that as our relationship develops we can explore with NOAA the possibility of

other avenues of bringing science to people. In the meantime, we've come to expect a friendly voice on the telephone, no matter where we call within NOAA. Everyone we've encountered has been extremely willing to help, and we very much appreciate it."

Byrd and her co-producer and co-host, Joel Block, present the information on the air as a team, with one introducing the subject and the other expanding upon it.

This technique enables them to layer in more information while maintaining their easily comprehensible, warm style.

Increase in Science Literacy

Earth & Sky's ultimate objective is to stimulate an increase in science literacy by improving the general public's perception of the accessibility of science for everyone, thus encouraging listeners to seek information through other science resources.

Earth & Sky is broadcast in all 50 states, including 43 of the top 50 U.S. radio markets, as well as in Canada, Europe, Central America, Australia, Japan, China, the Middle East and the South Pacific. Five new programs are produced each week, airing at least twice a day on most of its more than 600 U.S. station affiliates.

—Jeanne Kouhestani ☺

(The Washington, D.C., affiliate for *Earth & Sky* is WDCU-FM, 90.1, airing Monday through Friday at 8:00 a.m. A list of affiliate stations around the country will soon be on the NOAA Tackboard, and *Earth & Sky* post their previous month's scripts on the Internet, at [net ID]. To suggest an interesting program topic, please call Jeanne Kouhestani, NOAA Public Affairs, at 202-482-6090. You can also e-mail, your ideas to jeannek@pa@noaa [Banyan] or jkouhestani@hq.noaa.gov [Internet].)

Rasmussen Named ERL Director

Noted international atmospheric science leader James L. Rasmussen, the outgoing director of the World Weather Watch Program of the World Meteorological Organization in Geneva, has been named director of NOAA's Environmental Research Laboratories (ERL).

ERL conducts an integrated program of oceanic and atmospheric research that contributes to improving our fundamental understanding of the Earth, its oceans and inland waters, the lower and upper atmosphere, and the space environment. Headquartered in Silver Spring, Md., it comprises five laboratories in Boulder, Colo., and individual laboratories in Miami, Fla.; Princeton, N.J.; Ann Arbor, Mich.; Norman, Okla.; Seattle, Wash.; and Silver Spring.

Rasmussen was the director of the

Office of Meteorology of NOAA's National Weather Service from 1984-1989 and was the director of the NOAA Climate Analysis Center from 1982-1984.

He joined NOAA in 1972 as the science coordinator of the U.S. project office of the Global Atmospheric Research Program (GARP) Atlantic Tropical Experiment, then was director of the U.S. project office until 1976. His work there included coordination of the participation by the U.S. scientific community and government agencies to develop a complete and coherent U.S. contribution to the international experiment.

Rasmussen earned a Ph.D. and an M.S. in atmospheric science in 1968 and 1963, respectively, from Colorado State University, a B.S. in meteorology from the University of Utah in 1959, and a B.A. in mathematics and physics from St. Olaf College in 1958. ☺

First New Generation Aircraft Beacon in Use

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transmitter (ELT) is registered to E.I. du Pont de Nemours & Co. of Wilmington, Del. The ELT is one of ten the company's aviation division is installing aboard its corporate aircraft.

Legislation enacted in 1974 requires most U.S. fixed-wing aircraft to carry an ELT.

Developed in 1982

In 1982, the COSPAS-SARSAT satellite system was developed to use the 406 MHz frequency for distress beacons. COSPAS-SARSAT is an international search and rescue program that uses polar orbiting satellites to detect emergency beacons activated by aviation, maritime and terrestrial users in distress.

The COSPAS-SARSAT system, together with the 406 MHz ELT, offers the user the benefits of location accuracy of 2-5 km (1-3 miles), global detection, and a unique digital signal that is associated with a 406 MHz beacon registration database.

Registration of 406 MHz ELTs is mandatory in the United States. The registration database is kept at the United States Mission Control Center in Suitland, Md., just outside of Washington, D.C. The USMCC, managed and operated by NOAA's National Environmental Satellite, Data, and Information Service, collects data from U.S. operational ground stations at seven locations. The center is an integral part of the COSPAS-SARSAT system.

Central Library is a Resource for All

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Recently, the NOAA Central Library was designated a Government Printing Office (GPO) Depository, so a considerable number of GPO publications are also available.

NOAA's library is operated by the National Environmental Satellite, Data, and Information Service's National Oceanographic Data Center. For more information, call 301-713-2607. For reference materials or literature searches, call 301-713-2600. ☺

4,000 Lives Saved

COSPAS-SARSAT uses search and rescue payloads aboard NOAA environmental satellites and Russian navigation satellites. The COSPAS-SARSAT system has helped save nearly 4,000 lives since the first rescue in British Columbia, Canada, on Sept. 9, 1982.

When an emergency beacon is activated, the signal is received by the COSPAS and SARSAT polar orbiting satellites and relayed to an international network of ground stations. The ground station processes the alert data and forwards it to a national mission control center (MCC), which sends the alert message to the appropriate land or maritime rescue coordination center. There are 13 operational MCCs and 25 operational ground receiving stations in the international COSPAS-SARSAT System.

406 MHz ELTs are authorized for voluntary use by the Federal Aviation Administration. The Aviation Rulemaking Advisory Committee, which represents users, manufacturers, and the search and rescue community, is currently working on a recommendation to the FAA concerning mandatory requirements for the 406 ELT.

NOAA estimates that the mandatory requirement for 406 MHz ELTs could result in more than 90 additional lives saved annually, greater reduction in injuries, false alert reduction of at least 95 percent, reduced risks to search and rescue responders, and annual savings of \$7.1 million to public and private search and rescue providers. The first registered 406 MHz ELT opens the door to the probability that all aircraft will carry the COSPAS-SARSAT 406 MHz ELT in the future. ☺

No ESA Listing for Mid-Summer Chinook

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He added that the fisheries service will continue to work with the Tribes, state managers and other federal agencies to protect all stocks in the region.

The fisheries service has previously listed Snake River spring/summer chinook, Snake River fall chinook, Snake River sockeye and Sacramento River winter-run chinook. The agency recently proposed listing cutthroat trout from the Umpqua River in southern Oregon as endangered.

Earlier this year, the fisheries service reclassified two populations of Snake River chinook from threatened to the more fragile endangered.

The fisheries service also announced it was beginning the most far-reaching study of fish stocks ever undertaken by a federal agency with comprehensive status reviews of populations of pink, chum, sockeye and chinook salmon and sea-run cutthroat trout in Washington, Oregon, Idaho and California.

There has been growing concern recently about Pacific Coast salmon and sea-going trout, whose numbers have been dwindling over the past century—the result of a wide variety of human-caused factors and, more recently, a



Will Stelle, northwest fisheries manager

many-year drought and the effects of El Niño ocean conditions in the region.

The Endangered Species Act, a federal law passed in 1973 to conserve various species of fish, wildlife and plants facing extinction, defines species to include subspecies and distinct populations. If a stock of fish qualifies as a distinct population, it may be listed, even if the species is abundant elsewhere.

When a salmon species is listed under the Endangered Species Act, other federal agencies have to consult with the fisheries service to ensure their actions will neither jeopardize the species' continued existence nor destroy or adversely modify its habitat. ☺

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effort in the history of sea turtle conservation."

"I don't know how we can make our intentions any clearer," Kemmerer said. "This agency is not going to stand idly by while threatened or endangered sea turtles wash up dead on Texas beaches."

Ferrel Aids in Monitor Sanctuary Upgrade: A permanent mooring and current meter were deployed in the *Monitor* National Marine Sanctuary in mid-June with the assistance of the NOAA ship *Ferrel*.

NOAA's Sanctuaries and Reserves Division developed the mooring in response to an increasing need to accommodate both public and private expeditions to the sanctuary while minimizing the possibility of anchor damage to the remains of the famous Civil War ironclad ship, *USS Monitor*.

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John Broadwater, sanctuary manager, said that "Anchoring is one of the most difficult aspects of conducting research or diving operations at the *Monitor* National Marine Sanctuary. Because the *Monitor's* hull is badly deteriorated, contact from a ship's anchor could cause extensive damage. This new mooring is designed to eliminate the need for anchoring." Anchoring and other activities within sanctuary boundaries require a permit from NOAA.

Accessible Technology Award Given: NWWS staffer Michael Yekta received the Department of Commerce's Accessible Technology Award for the use he has made of enabling technology, and for his outstanding performance in computer programming and database management with the National Weather Service.

The award was presented at Commerce Department headquarters in Washington during an exhibit of technologies geared toward enabling people with vision, hearing and mobility impairments in the workplace to overcome disabilities. ☺

Insights on Development, Diversity

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as the TEDs.

Habitat Assessment

Habitat assessment is another key area of study for lab scientists. Estuarine wetlands are 'nurseries' for marine ecosystems. Yet it is these nursery habitats that are most often destroyed as a result of coastal development. A better understanding of how the two are related will help us continue to bridge the traditional gap between the environment and the economy in order to reach sustainable development.

At the lab, scientists are also studying the ecology of natural, created, and restored wetlands. A simple but effective technique is being used to help identify wetlands species. It involves the use of round fiberglass tubs with the bottoms cut out. The tubs are pushed down into the water and as scientists pump the water out, they can count the species.

During a roundtable lunchtime discussion I had the opportunity to focus on another important issue: diversity

HQ Offices Realigned

The realignment of the NOAA headquarters staff offices has been approved by the Department of Commerce, making them better able to support the NOAA line and program offices, as well as the Department itself.

The realignment:

- ☐ redescribes the functions of the Chief Scientist,
- ☐ establishes the Counsellor to the Office of the Under Secretary, the Office of Sustainable Development and Intergovernmental Affairs, the Program Coordination Office and the Office of High Performance Computing and Communications;
- ☐ abolishes the Office of External Affairs and establishes the Office of Legislative Affairs, the Office of Public and Constituent Affairs, and the Office of Educational Affairs;
- ☐ renames and redescribes the Systems Program Office as the Systems Acquisition Office. ☺

within NOAA. The discussion was a valuable opportunity to share ideas and for me to hear firsthand what NOAA employees think. My sense is that on the whole, people are pleased that NOAA and the Department of Commerce are paying attention to the issue. However, there is real concern that attention and solutions will not be directed at the working level.

Diversity Goals

Some of the thoughts shared during the discussion included making managers accountable for showing real progress in reaching diversity goals and in providing for greater employee recognition. Some new ideas included developing a program of internships or temporary tours of duty in Washington so employees can have a broader exposure to NOAA. These are the kinds of things our NOAA Diversity Council will be pursuing in partnership with employees.

This visit was more than an opportunity to see another NOAA facility. The interactions I had with people underscored the commitment and excitement that NOAA employees have to their work. Their dedication, interest, and enthusiasm were apparent as they spoke of their work and its relevance to our broader goal of sustainable development. The Galveston Lab is a microcosm of NOAA and seeing the staff's depth of commitment makes me proud once again to be part of the NOAA team. ☺

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